

Date: Tuesday, 07/04/2009 10:23:34 AM
 * User: Julie Dawson

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: SHORT STEP ASSEMBLY
Job Number	: 46995		
Estimate Number	: 11672		
P.O. Number	:	Part Number	: D350591121
This Issue	: 07/04/2009 S.O. No. :	Drawing Number	: D2351 UNDER REVIEW- <i>09.04.03</i>
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: // Type : LARGE FAB ASSY	Drawing Revision	: E
Previous Run	: 43114	Material	:
Written By	:	Due Date	: 28/04/2009 Qty: 3 Um: Each
Checked & Approved By	: <i>JUD 09-04-07</i>		
Comment	: Est Rev:E 02.10.21 Re-format; Incorporated D2351-041 IPP K J/RF est rev. F 06.02.23 added grinding EC		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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for JUD 09/05/06


Comment: DOCUMENT CONTROL

Photocopy bluefile and type labels as per PPP D350-591-121CHG004

09/05/06

2.0	D2244116	Step Extrusion
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Comment: Qty.: 0.5000 Each(s)/Unit Total : 1.5000 Each(s)

Pick:

Qty Part Number Description Batch

0.5 D2244-116 Extrusion

~~B377~~ B33733

SAD 09-04-23

3.0	LARGE FAB 1	LARGE FABRICATION RESOURCE 1
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Comment: LARGE FABRICATION RESOURCE 1

1-Cut D2244-116 extrusion to 55.32" long as per Dwg D2351 using cutting table setup DT8185-G

2-Drill extrusion per Dwg D2351 using Jig DT8230 for rivets.

3-Deburr

SAD 09-04-23 (3)

4.0	BENDING	BENDING MACHINE - SKIDTUBES
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(PTC)

Comment: BENDING MACHINE

Bend per Dwg D2351 using Bend Program D23561dd FT011

09-4-29 (3)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
9-4-29	4.1	<u>Staubli rod</u> ; Bend as per DW6D2351-041 using CNC Bender 1 and Falo's FTO11. Use bend program 2351-041 PERMANENT CHANGE		09/05/06			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 07/04/2009 10:23:35 AM
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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 46995

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 02/01/29 (83)

6.0

D28501

End Bracket



Comment: Qty.: 1.0000 Each(s)/Unit Total: 3.0000 Each(s)

Pick:

Qty Part Number Description Batch
1 D2850-1 End Bracket *326919*

P 09.04.30 3

7.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel Fwd and Aft end for welding

2-Weld Aft End Bracket per QSI 004 & Dwg D2351 using Welding Jig DT8033

A/R Aluminum Rod *M110972*

3-Do not Grind Flush

P 09.04.30 3
P 09.04.30 3

8.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

ID 09.04.30

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 02/01/30 (83)

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SAD ~~11/09/07~~ 09/05/07

(3X)

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

M-1 09/05/01

(3X)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 46995

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description:

✓ 12.0 D2582 Step Leg Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total: 3.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2582

Step Leg Assy

~~B44293~~

B44293

SAN

09-05-01

(3)

✓ 13.0 MS20600AD4W3 Cherry Rivets



Comment: Qty.: 16.0000 Each(s)/Unit Total: 48.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

16 MS20600AD4W3

Rivet

M104715

SAN

09-05-01

(3)

14.0 LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Rivet Leg Assembly as per Dwg D2351

SAN

09-05-01

(3)

15.0 QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

509/05/01

(3)

16.0 D267334

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 3.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2673-34 End Plate

B35887

PK

09-05-01

3

17.0 LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld Fwd End Plate per QSI 004 & Dwg D2351

A/R

Aluminum Rod

M110130

PK

09-05-01

3

2-Grind end cap flush per dwg D2351

SAN 09-05-03

(3)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 46995

Part Number: D350591121

Job Number:



Seq. #: Machine Or Operation: Description :

18.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

PD 09-05-05 (3)

19.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

09/05/05 (3)

20.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Touch up Alodine

MDI FL

09/05/05

21.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME:

3:30

OVEN TEMPERATURE:

320°

FINISH TIME:

4:00

FL 09/05/05

22.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Wing Walk per Dwg D2351 and QSI 005 4.4

Batch: M111013

MDI

09/05/06

23.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

BR

04-05-6 (3)

24.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

25.0

D22301

Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total : 3.0000 Each(s)

Pick:

Packing Kit Qty Part Number Description Batch

46427

SS 09/05/06 (3)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 46995

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description :

1 D2230-1 Mounting Lug

26.0

D22303

Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total: 3.0000 Each(s)

Pick:

Packing KitQty Part Number

Description

Batch

1 D2230-3 Mounting Lug

46516

SS 09/05/06 (X3)

27.0

D2856400

Abrasion Strip



Comment: Qty.: 0.6000 f(s)/Unit Total: 1.8000 f(s)

Pick:

Packing KitQty Part Number

Description

Batch

1 D2856-400 7.20" Abrasion Strip

46543

SS 09/05/06 (X3)

28.0

AN337A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total: 6.0000 Each(s)

Pick:

Packing KitQty Part Number

Description

Batch

2 AN3-37A

Bolt

M105425

SS 09/05/06 (X3)

29.0

AN413A

Bolt



Comment: Qty.: 3.0000 Each(s)/Unit Total: 9.0000 Each(s)

AN4-13A

Batch:

M110731

SS 09/05/06 (X3)

30.0

AN960JD10

Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total: 12.0000 Each(s)

Pick:

Packing KitQty Part Number

Description

Batch

4 AN960JD10

Washer

M110985

SS 09/05/06 (X3)

31.0

AN960JD416

Washer



Comment: Qty.: 6.0000 Each(s)/Unit Total: 18.0000 Each(s)

Pick:

Packing KitQty Part Number

Description

Batch

6 AN960JD416

Washer

M110363

SS 09/05/06 (X3)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 46995

Part Number: D350591121

Job Number:



Seq. #:	Machine Or Operation:	Description :
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32.0	MS21042L3	Nut
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Packing Kit	Qty	Part Number	Description	Batch
2	MS21042L3	Nut (or -3)		M110844

SS 09/05/06 (X3)

33.0	MS21042L4	Nut
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Comment: Qty.: 3.0000 Each(s)/Unit Total : 9.0000 Each(s)

Pick:

Packing Kit	Qty	Part Number	Description	Batch
3	MS21042L4	Nut (or -4)		M110450

SS 09/05/06 (X3)

34.0	QC4	INSPECT 100% KITS FOR COMPLETENESS
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Comment: INSPECT 100% KITS FOR COMPLETENESS

S 09/05/06 (X3 LH)

35.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-591-121

Location: SD

PPP Rev: D

ab/b

sej

36.0	QC21	FINAL INSPECTION/W/O RELEASE
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Comment: FINAL INSPECTION/W/O RELEASE

09/05/06 (X3)

Job Completion



ME 09-05-06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN KE	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED H	APPROVED H	DRAWING NO. D2351	REV. E SHEET 1 OF 2
DATE 05.11.14		TITLE HIGH FLOAT STEP ASSEMBLY	SCALE NTS
A	95.02.15	NEW ISSUE	
B	97.05.22	END CAPS CHANGED	
C	97.07.23	ADDED BUSHING AND FACING INFO	
D	98.12.17	CHANGED TO BEND, D2850 REPLACES D2357 & D2358, INCORP. DEO 9084	
E	05.11.14	UPDATE FINISHING NOTE	

D2351 HIGH FLOAT STEP ASSEMBLY PARTS LIST

Part No.	Description	QTY -041	QTY -042
D2351-041	High Float Step Assembly (LH)	X	
D2351-042	High Float Step Assembly (RH)		X
D2244-55.4	STEP EXTRUSION*	1	1
D2582	STEP LEG ASSEMBLY	1	1
D2673-34	STEP END PLATE	1	1
D2850-1	END BRACKET	1	
D2850-2	END BRACKET		1
MS20600AD4W3	RIVETS	16	16

*cut per drawing

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

NO. 46995

RELEASED
05.11.28 H

PH
ECN 1105

UNDER REVIEW

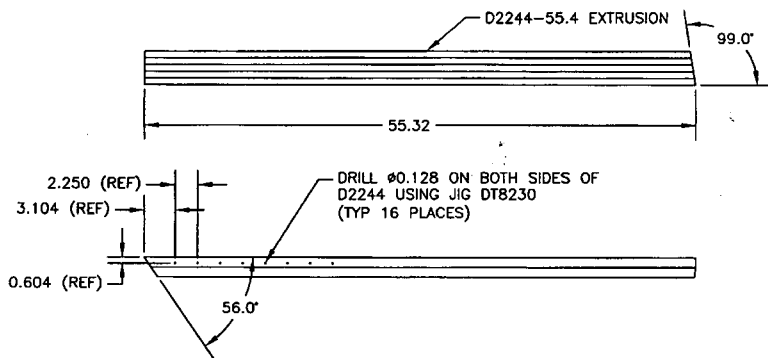
07.11.29 A

PURPOSE 268

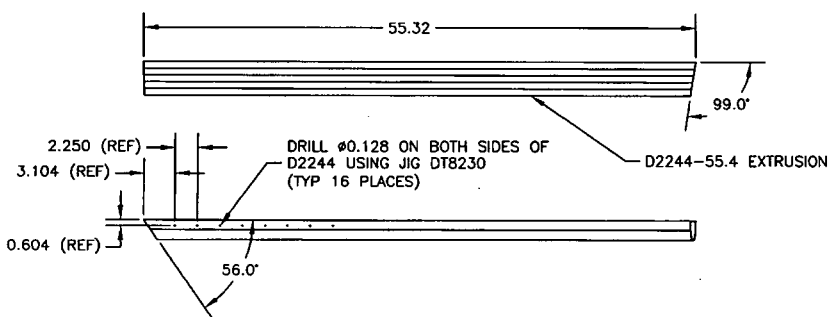
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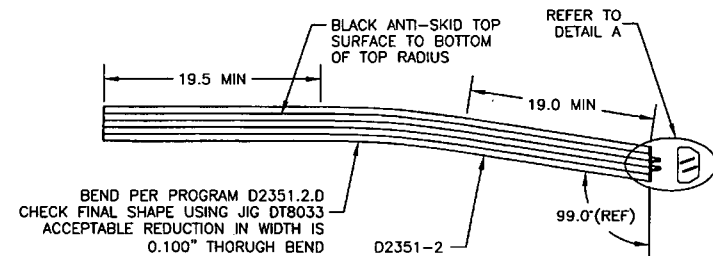
D2351-2 CUTTING/DRILLING DETAIL
RIGHT STEP



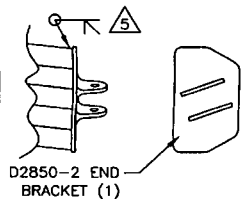
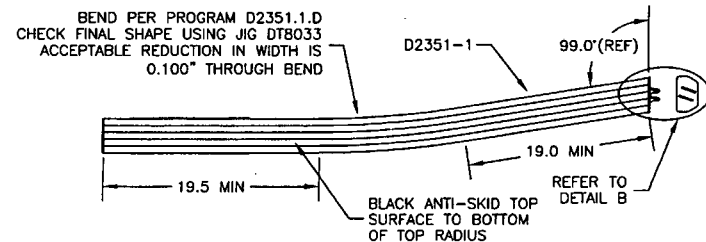
D2351-1 CUTTING/DRILLING DETAIL
LEFT STEP



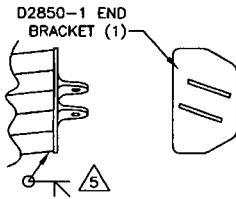
D2351-042 BENDING/ASSEMBLY DETAIL
RIGHT STEP



D2351-041 BENDING/ASSEMBLY DETAIL
LEFT STEP

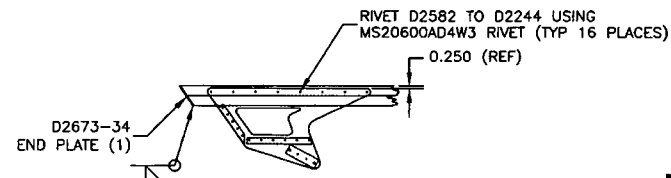


DETAIL A
SCALE: 1:4



DETAIL B
SCALE: 1:4

D2582 STEP LEG ASSEMBLY (1)



GENERAL NOTES

- 1) WELD PER DART QSI 004
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

CHAMFER D2244 EXTRUSION 0.075"x45° BEFORE WELDING D2850-1 OR D2850-2 IN PLACE. DO NOT GRIND FLUSH.

RELEASED
05.11.14

UNDER REVIEW

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DESIGN KE	DRAWN BY PH	DART	DART AEROSPACE LTD. MARKHAM, ONTARIO, CANADA
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E
DATE 05.11.14	TITLE HIGH FLOAT STEP ASSEMBLY	SHEET 2 OF 2	SCALE 1:12